

RIVERS AND FLOODS

[River and Flood Division, MERRILL BERNARD in Charge]

The report for April 1939 will be included in the May issue of the REVIEW.—*Editor.*

WEATHER ON THE ATLANTIC AND PACIFIC OCEANS

[The Marine Division, W. E. HURD, acting in charge]

NORTH ATLANTIC OCEAN, APRIL 1939

By H. C. HUNTER

Atmospheric pressure.—The monthly means of pressure nowhere showed any extraordinary departure from normal. The eastern and southwestern regions had somewhat higher values than normal, but the central and northwestern had lower than normal. The greatest departure was to be found near Newfoundland, Labrador, and southern Greenland, the station at Belle Isle, Newfoundland, averaging 0.11 inch deficient. Both the Azores high area and the Icelandic low were displaced to westward of their usual April positions.

There were considerable fluctuations of pressure during the month. The northwestern and north-central portions experienced quite low pressure about the 10th to 18th, but in contrast the region from Bermuda to the Azores had high pressure from the 12th to 18th. Around the British Isles low pressure during the first 8 days was followed by somewhat irregular conditions, but with rather high pressure prevailing about the 18th and again during the final 5 days of the month.

The extremes of pressure in the vessel reports at hand were 30.66 and 28.47 inches, both noted near the British Isles. The high mark was reached within a few miles of the southwest coast of Ireland, about noon of the 19th, the vessel being the British steamship *Montreal City*. An unidentified vessel radioed the report of the lowest reading from near 52° N., 22° W., late on the forenoon of the 3d.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, April 1939

Station	Average pressure	Departure	High-est	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Julianehaab, Greenland	29.73	-0.10	30.10	4	29.10	14
Reykjavik, Iceland	29.82	+0.02	30.36	30	29.21	15
Lerwick, Shetland Islands	29.83	+0.03	30.53	29	29.09	15
Valencia, Ireland	29.92	+0.03	30.62	19	28.91	4
Lisbon, Portugal	30.04	+0.05	30.39	15	29.59	5
Madeira	30.02	+0.01	30.24	14	29.80	4
Horta, Azores	30.08	-0.07	30.46	14	29.78	3, 4
Belle Isle, Newfoundland	29.78	-0.11	30.40	22	29.08	16
Halifax, Nova Scotia	29.92	-0.01	30.40	18	29.46	30
Nantucket	29.93	-0.04	30.50	17	29.33	2
Hatteras	30.00	-0.01	30.47	14	29.60	29
Bermuda	30.14	+0.05	30.36	15	29.64	29
Turks Island	30.05	+0.03	30.14	14	29.89	4
Key West	30.02	0.00	30.23	14	29.86	29
New Orleans	30.02	+0.02	30.41	13	29.72	6

¹ For 25 days.

NOTE.—All data based on a. m. observations only, with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

Cyclones and gales.—All sections considered, there was about the usual storm activity for April over the North Atlantic. The first 5 days included numerous gale reports from the eastern part of the chief steamship lanes to northwestern Europe, but that region was nearly free from vigorous storms during the remainder of the month. The central and western portions of the North Atlantic were

most affected by strong lows about the 7th to 11th and during the final 5 days.

When April began, two storm centers were between the southern Grand Banks and the British Isles, near the fifteenth and fortieth meridians, respectively. By the evening of the 2d these had coalesced near 53° N., 22° W., and a very intense low was the result. For more than a day there was no marked change, but high pressure prevailed at the time over Greenland and the low presently moved a moderate distance toward the east-southeast with some loss of strength, then it lengthened toward the northeast and separated into two cyclones, each much weaker than the single storm had been; so by the evening of the 6th scarcely any strong winds remained in the region. The German liner *Columbus* had reported force 11 in connection with this cyclonic system, and another vessel noted force 10.

The next instance of force-11 wind likewise was from the *Columbus*, the day being the 7th and the location near 41° N., 63° W., and about the same time the American steamship *Exiria* noted force 10 when about 300 miles to southward of this position. At the time a cyclone was centered to northwestward of the Gulf of St. Lawrence, with a narrow extension toward the southeast and south; but this center quickly ceased to affect the much traveled sections of the ocean.

Soon afterward much of the western Atlantic was under the influence of another low, which was off the Carolina coast on the 8th, not yet well developed, but on the 9th was a short distance south of Nova Scotia and comparatively strong. Continued advance toward the northeast had brought the center by the 11th and the forenoon of the 12th to about 52° N., 32° W., with great intensity. The lone report of hurricane wind from the North Atlantic this month was connected with this low, the vessel being the Norwegian motor tanker *Britannia*.

During the latter part of the 12th and all of the 13th the center moved northeastward, losing force. On the whole, the period from the 13th to 22d was a quiet one for April over the Atlantic. In the western Gulf of Mexico, however, there was a brief encounter with intense winds on the 16th, when the American tanker *Eastern Sun* noted strong-gale force; there was at this time a cyclonic system of marked extent from central Canada southward to the western Gulf, and the vessel met the high winds in the southern part of the storm area.

About the 27th, by the uniting of moderately strong cyclones near mid-Atlantic, a strong low formed and was felt over a large area on that day and the next, the *American Merchant* meeting storm-force winds. As this low weakened, other centers, advancing from the North American Continent, caused gales over the portion west of the fifty-fifth meridian, though no force greater than 10 there has yet been reported. This group of low centers was still quite strong when the month ended.

Fog.—There was decided contrast in the parts of the month when fog was met most frequently over different North Atlantic areas. In the general vicinity of the

Grand Banks it was much more prevalent after the 17th of the month than before and this was even more notably the case near the coast of the American Continent from Nova Scotia to Virginia. Near 50° N., 35° W., the comparatively few reports of fog indicate its occurrence only during the first 9 days; while to northward and north-eastward of the Azores fog was noted only about the 16th and the 30th.

Over most of the North Atlantic fog was less common than usual in April. In particular a large region extending for several hundred miles to westward and southwestward of Ireland has yielded scarcely a single report of fog, though numerous vessels have furnished weather observations for this much traversed region.

The leading square for fog frequency was that from 40° to 45° N., 45° to 50° W., where there were 12 days. Close to the coast of the United States no other square

equaled that from 35° to 40° N., 70° to 75° W., where the count was 7 days. As a rule, from the eastern limits of the Grand Banks to Cape Cod there was an increase in amount of fog from March to April, and from Cape Cod to Hatteras there was about the same amount as during March. In the Gulf of Mexico there was almost complete absence of fog during April, only two reports coming from the entire Gulf area.

From the vicinity of the Guinea coast, about 9° N., 16° W., where fog is very seldom met, there has been received the statement that a thin fog patch was traversed by a north-bound steamship on the 10th.

Two collisions due to fog occurred near Sandy Hook. The earlier, on the 19th, resulted in considerable damage, but both vessels easily made port. The other collision, on the 27th, led to the sinking of a pilot boat, but without loss of life.

OCEAN GALES AND STORMS, APRIL 1939

Vessel	Voyage		Position at time of lowest barometer		Gale began April	Time of lowest barometer, April	Gale ended April	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Seamail, Am. S. S.	New York	Copenhagen	49 48 N.	35 30 W.	30	3a, 1	1	29.55	NW	W, 7	W	WNW, 9	
Flora, Du. S. S.	do	La Guaira	35 48 N.	73 48 W.	1	10p, 1	2	29.67	SSW	WSW, 9	W	WSW, 9	SW-W.
Binnendyk, Du. S. S.	Rotterdam	Boston	46 47 N.	29 59 W.	3	4a, 3	4	29.15	WNW	WNW, 7	NNW	NW, 9	None.
Europa, Ger. S. S.	Cherbourg	New York	47 38 N.	26 40 W.	3	2p, 3	4	28.53	WSW	W, 9	NW	NW, 10	WSW-NW.
Columbus, Ger. S. S.	Gibraltar	do	40 18 N.	21 54 W.	3	5p, 3	4	29.42	W	W, 7	WNW	WNW, 11	WSW-W.
Pres. Harding, Am. S. S.	Cobh	do	48 24 N.	28 24 W.	3	10p, 3	4	29.69	NNW	NNW, 8	NNW	NNW, 8	WSW-NNW.
West Kyska, Am. S. S.	Antwerp	Georgetown, S. C.	43 20 N.	24 34 W.	3	Mdt, 3	4	29.07	WNW	NW, 9	NW	NW, 9	W-NW.
American Farmer, Am. S. S.	London	New York	46 52 N.	22 02 W.	4	3a, 4	4	28.57	W	SW, 6	NW	WNW, 9	SW-W.
Spaarndam, Du. S. S.	Antwerp	New Orleans	42 28 N.	40 17 W.	4	4a, 4	4	29.08	S	W, 8	WNW	W, 8	None.
Schuykill, Br. M. S.	Aruba	Liverpool	41 02 N.	29 17 W.	2	1p, 4	5	29.65	WNW	NW, 8	NNW	NNW, 9	
Exiria, Am. S. S.	Lisbon	New York	35 40 N.	56 30 W.	6	7a, 6	6	29.67	WNW	WNW, 7	NW	WNW, 8	W-NW.
American Farmer, Am. S. S.	London	do	42 39 N.	40 35 W.	7	—p, 6	7	29.48	WNW	SSW, 6	NW	WNW, 9	SSW-W.
Britannia, Nor. M. S.	Port Arthur	Liverpool	39 20 N.	64 42 W.	6	2a, 7	7	29.77	S	S, 9	NW	S, 9	S-SW.
Collamer, Am. S. S.	New York	Havre	44 04 N.	42 22 W.	7	6a, 7	8	29.40	WNW	WNW, 7	WNW	NW, 10	WNW-NW.
Exmoor, Am. S. S.	do	Casablanca	35 55 N.	34 26 W.	6	Noon, 7	8	30.08	S	S, 8	W	W, 8	S-W.
Black Gull, Am. S. S.	do	Antwerp	40 59 N.	62 49 W.	7	Noon, 7	7	29.81	SSE	SSW, 8	SSW	SSW, 9	SSE-SSW.
Emile Francqui, Belg. S. S.	Antwerp	New York	42 43 N.	44 14 W.	7	2p, 7	7	29.67	SW	NW, 8	NW	NW, 9	
Columbus, Ger. S. S.	Gibraltar	do	40 36 N.	62 56 W.	7	2p, 7	7	29.74	SSE	SW, 11	W	SW, 11	SSW-WNW.
Exiria, Am. S. S.	Lisbon	do	35 50 N.	62 00 W.	7	4p, 7	9	29.53	SSW	W	NW	SSW, 10	
Knoxville City, Am. S. S.	Cristobal	London	49 14 N.	9 57 W.	8	Noon, 9	9	29.53	S	SSE, 8	SSE	S, 8	None.
Emile Francqui, Belg. S. S.	Antwerp	New York	41 00 N.	55 36 W.	9	4p, 9	10	29.31	WSW	SW, 5	NW	W, 8	SSW-WSW.
American Farmer, Am. S. S.	London	do	41 12 N.	56 20 W.	9	4p, 9	10	29.45	SSW	SSW, 9	WNW	SW, 10	SSW-W.
Washington, Am. S. S.	Cobh	do	44 32 N.	40 53 W.	10	Noon, 11	11	29.24	W	W, 10	NW	W, 10	W-WNW.
Britannia, Nor. M. S.	Port Arthur	Liverpool	44 22 N.	44 31 W.	10	Noon, 11	12	29.45	WNW	WNW, 11	NW	NW, 12	WNW-NW.
James McGee, Am. S. S.	Cartagena	Havre	40 00 N.	39 00 W.	11	4p, 11	12	29.71	W	WNW, 8	NW	WNW, 8	WNW-W.
Black Gull, Am. S. S.	New York	Antwerp	47 02 N.	31 55 W.	11	Mdt, 11	11	28.87	W	WSW, 7	SW	WSW, 9	SW-W.
Eastern Sun, Am. M. S.	Beaumont	Marcus Hook	29 28 N.	93 20 W.	16	4p, 16	16	29.71	S	SSW, 9	SW	SSW, 9	S-SW.
San Jose, Fr. S. S.	Havre	New York	41 11 N.	44 44 W.	16	11p, 16	16	30.08	SSW	NW, 7	SSW	SSW, 8	SSW-W-NW
Excalibur, Am. S. S.	Gibraltar	Boston	40 30 N.	36 10 W.	19	8a, 19	20	29.64	N	N, 10	N	N, 10	SSE-NW-N.
Svanhild, Dan. S. S.	Aalborg	New York	57 20 N.	8 30 W.	19	8p, 19	19	30.15	SW	NW, 5	NW	SW, 9	WSW-NW.
San Jose, Fr. S. S.	Havre	do	40 42 N.	64 08 W.	19	6a, 20	20	30.04	S	S, 9	SSW	S, 10	S-SW.
Clydefield, Br. M. S.	Las Piedras	Sheerness	36 38 N.	37 42 W.	19	10a, 20	20	29.46	N	NNW, 9	NNE	NNW, 9	NNW-NE.
Svanhild, Dan. S. S.	Aalborg	New York	55 46 N.	26 36 W.	22	4p, 23	24	29.87	W	NNW, 10	NNW	NNW, 10	WNW-NNW.
Jouett, U. S. N.	Chatham, England	Norfolk	38 46 N.	56 13 W.	24	2p, 24	24	29.93	SW	NW, 9	W	NW, 9	SW-NW.
Black Gull, Am. S. S.	Rotterdam	New York	44 00 N.	40 40 W.	27	4a, 27	27	29.04	NNW	NNW, 10	NW	NW, 10	ENE-NNW.
American Merchant, Am. S. S.	London	do	44 37 N.	40 33 W.	27	8a, 27	27	29.00	WNW	WNW, 8	WNW	W, 11	ESE-WNW-NNW.
Patrick Henry, Am. S. S.	New Orleans	Havre	39 59 N.	48 50 W.	27	4a, 28	28	29.55	SSE	SW, 8	WNW	SW, 8	S-W.
American Merchant, Am. S. S.	London	New York	41 12 N.	57 36 W.	30	9p, 29	30	29.60	S	E, 5	NW	S, 8	ENE-S.
Black Gull, Am. S. S.	Rotterdam	do	41 24 N.	59 48 W.	30	10a, 30	30	29.06	SW	SW, 10	W	W, 10	SW-W.
Zaremba, Am. S. S.	St. Vincent, C. V. I.	Boston	35 48 N.	59 18 W.	30	4p, 30	30	29.61	SW	SW, 8	W	SW, 8	SW-W.
NORTH PACIFIC OCEAN													
Sanyo Maru, Jap. M. S.	Yokohama	Los Angeles	43 30 N.	162 31 E.	4	4a, 4	5	29.88	SE	SE, 9	S	SE, 9	SE-SSE.
Silver Maple, Br. M. S.	Manila	Portland, Ore.	39 62 N.	158 43 E.	3	4a, 4	4	29.61	S	S, 9	NW	S, 9	SSE-SSW.
Naruto Maru, Jap. M. S.	Yokohama	Los Angeles	42 10 N.	154 55 W.	4	6a, 5	5	29.07	NNE	NNE, 8	W	NNE, 9	NNE-W.
Empress of Russia, Br. S. S.	Victoria	Yokohama	48 33 N.	169 06 E.	8	Mdt, 8	9	29.60	W	WSW, 8	W	WNW, 9	WSW-WNW.
Sanyo Maru, Jap. M. S.	Yokohama	Los Angeles	45 12 N.	152 50 W.	9	2a, 9	9	29.17	S	SSW, 8	W	SW, 9	S-SW.
Hikawa Maru, Jap. M. S.	do	Vancouver, B. C.	49 55 N.	148 42 W.	9	Noon, 9	9	28.84	S	S, 7	W	SSW, 9	
Hoyo Maru, Jap. M. S.	San Francisco	Sasebo	50 06 N.	179 48 W.	11	7a, 10	11	28.35	NW	ESE, 4	WSW	W, 11	ESE-Var-NW.
Oregonian, Am. S. S.	do	Portland, Ore.	37 48 N.	122 54 W.	13	4a, 13	13	29.85	NW	WNW, 6	NNW	NNW, 8	WNW-NW.
Marchen Maersk, Dan. M. S.	Yokohama	Los Angeles	44 54 N.	171 54 W.	16	Noon, 16	16	29.94	S	S, 8	W	S, 8	SE-S.
Pres. Harrison, Am. S. S.	San Francisco	Honolulu	31 48 N.	139 05 W.	18	5p, 18	18	29.72	S	SSW, 8	SW	SSW, 8	S-SW.
Empress of Asia, Br. S. S.	Honolulu	Victoria, B. C.	38 15 N.	141 00 W.	16	2a, 18	18	29.98	NNE	NE, 9	E	NE, 9	NE-ENE.
Corneville, Nor. M. S.	Hong Kong	Los Angeles	35 26 N.	145 12 W.	18	2a, 19	19	29.82	N	NE, 9	NE	N, 10	N-NE.
Washington, Am. S. S.	Shanghai	Portland, Ore.	47 00 N.	154 30 W.	24	2a, 26	26	29.56	WNW	NW, 8	NW	NW, 8	
City of Dalhart, Am. S. S.	Hong Kong	Los Angeles	34 01 N.	150 60 E.	27	8p, 27	27	29.65	SE	SSE, 8	S	SSE, 8	SE-SSW.

¹Position approximate.

²Barometer uncorrected.

³March.